

Notice of Allowability

Application No.

10/054,327

Examiner

Chieh M Fan

Applicant(s)

YOUNG ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendment filed 12/29/04.
2. ☒ The allowed claim(s) is/are 17-21,27,30,31,37-41,61-69 and 71-95.
3. ☒ The drawings filed on 13 November 2001 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

DETAILED ACTION

Examiner's Amendment

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Michael Farjami on 01/07/05.

The application has been amended as follows:

In the claims:

- a. In claim 17, line 10, "a data line" has been changed to --- a plurality of data lines ---.
- b. In claim 17, line 12, "said data line" has been changed to --- said plurality of data lines ---.
- c. In claim 17, lines 14-15, "a plurality of data lines" has been changed to --- said plurality of data lines ---.
- d. In claim 37, line 18 (line 4 from the bottom), "said one or more of xDSL data frames" has been changed to --- said one or more xDSL data frames ---.
- e. In claim 71, line 13 (the last line), "said data line" has been changed to --- said plurality of data lines ---.

Statement of Reasons for Allowance

2. The following is an examiner's statement of reasons for allowance:

Regarding claims 17-21 and 67-69, the prior art of record does not teach "the data and said operational and/of control information are multiplexed over the plurality of data lines."

Regarding claims 27, 30 and 31, the prior art of record does not teach "said frame signal is used to mark the boundary of each multi-channel data frame by having a first predetermined value for a first number of bit clock cycles at the frame beginning, and said frame signal has a second predetermined value for the rest of said multi-channel data frame."

Regarding claims 37-41, the prior art of record does not teach "a plurality of receive lines can be used for receiving XDSL data; a plurality of transmit lines can be used for transmitting XDSL data; a bit clock signal line can be used for carrying a bit clock signal adapted for said XDSL transmission protocol; and a frame signal can be used for clocking XDSL data in the form of a/ one or more XDSL data frames transferred in parallel over said plurality of receive lines and/or said plurality of transmit lines."

Regarding claims 61-66, the prior art of record does not teach "a digital interface for coupling said digital controller and analog front end circuit over the multiplexed bus, said digital interface including: (i) a plurality of data receiving lines; and (ii) a plurality of data transmitting lines; and (iii) a clock signal adapted for supporting transmission

requirements of each of said plurality of separate communications channels; and wherein a plurality of separate control channels are implemented in time-multiplexed form over the multiplexed bus for each of said plurality of separate communications channels respectively.”

Regarding claims 71-82, the prior art of record does not teach “a digital interface for coupling said digital controller and analog front end circuit over the multiplexed bus, said digital interface including: (i) a plurality of data receiving lines; and (ii) a plurality of data transmitting lines; and (iii) a clock signal adapted for supporting transmission requirements of each of said plurality of separate communications channels; and wherein a plurality of separate control channels are implemented in time-multiplexed form over the multiplexed bus for each of said plurality of separate communications channels respectively.”

Regarding claims 83-89, the prior art of record does not teach “a bit clock signal line for carrying a bit clock signal adapted for clocking said XDSL transmit data over the XDSL digital communications link; and a plurality of parallel transmit signal lines, separate from said bit clock signal line, and coupled to said digital controller for communicating said XDSL transmit data in parallel over the XDSL digital communications link to said one or more XDSL channels.”

Regarding claims 90-95, the prior art of record does not teach “(a) generating a bit clock within a computer system bus adapted for data transmission requirements of the digital communications link; (b) generating a separate frame signal within said computer system bus for indicating a boundary for a data frame carrying channel data

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for the plurality of respective data channels; (c) communicating said channel data within said computer system bus between the digital controller and the plurality of analog CODECS based on said bit clock and said separate frame signal using time division multiplexing, such that channel data words for each of the plurality of respective data channels are clocked at different respective portions of said data frame."

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

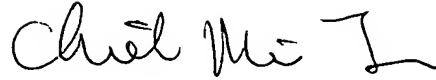
3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chieh M Fan whose telephone number is (571) 272-3042. The examiner can normally be reached on Monday-Friday 8:00AM-5:30PM, Alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on (571) 272-3056. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.

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A handwritten signature in black ink, appearing to read "Chieh M Fan", with a stylized flourish at the end.

Chieh M Fan
Primary Examiner
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cmf
January 8, 2005